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A review of the genus *Chionopsyche* Aurivillius, 1909 with the description of a new species

(Lepidoptera, Lasiocampidae: Chionopsychinae)

by

Vadim V. Zolotuhin

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Abstract: The genus *Chionopsyche* Aurivillius, 1909 is reviewed. A new species, *Chionopsyche* ***admirabile*** **spec. nov.** is described from Eastern Cameroon (Type locality: Cameroon, Zamakoë). The Holotype of the taxon is deposited in the Royal Museum for Central Africa, Tervuren, Belgium (MRCA). The genus now consists of three valid taxa and currently represents the only known member of the subfamily Chionopsychinae Aurivillius, 1930, native to the Afrotropics. Diagnosis of the subfamily and genitalic characteristics of both sexes are covered; biology and early instars are still completely unknown.

Zusammenfassung: Die Gattung *Chionopsyche* Aurivillius, 1909 wird revidiert. *Chionopsyche* ***admirabile*** **spec. nov.** aus Kamerun (Typenfundort: Zamakoë) wird als neue Art beschrieben. Das Holotypus ♂ der Art ist im Musée Royal d' Congo afrique, Tervuren, Belgium (MRCA), deponiert. Die Gattung besteht demnach aus drei Taxa und ist der einzige Vertreter der Unterfamilie Chionopsychinae Aurivillius, 1930, in der afrotropischen Fauna. Die Diagnose der Unterfamilie schließt Genitalmerkmale beider Geschlecher ein; Biologie und Präimaginalstadien der Gattung sind aber völlig unbekannt.

Introduction: The genus *Chionopsyche* Aurivillius, 1909, is well known but has been the object of some taxonomic doubts and disputes. Two taxa were known as congeners, which, due to their unusual wing venation and very different, strongly asymmetric male genitalial characters, were accepted as constituting their own, distinct subfamily - the Chionopsychinae Aurivillius, 1930. However, at family level, some doubt has been expressed on their placement within the Lasiocampidae (see Minet, 1994).

A distinctly different species of *Chionopsyche* was discovered during revisionary work of the family (Zolotuhin, in prep.). It was found to be endemic to the eastern Cameroon and it is known only from the type locality; such a disjunct distributional generic pattern for a genus is quite unexpected. A description of the new species is given here, and description of ♀♀, which have not previously been described, is also included into the review.

Material and methods: 55 specimens of this rare and very localised genus were examined from the following institutions' collections: National Museum of Kenya, Nairobi (NMK); Natural History Museum, London, UK (formerly British Museum of Natural History) (BMNH); Royal Museum for Central Africa, Tervuren, Belgium (MRCA); Naturhistorisches Riksmuseet Stockholm, Sweden (RMS), Zoologische Staatssammlung, Munich, Germany (ZSM) and Museum Witt, Munich, Germany (MWM).

Additional examinations were made of nucleotide sequence of EF-1α nuclear gene deposited in GenBank (www.ncbi.nlm.nih.gov) under registration number AF654582 (*Chionopsyche montana*).

Genitalia dissections: From the above material, a total of 10 genitalia dissections from both sexes were made using standard dissecting techniques and mounted in Euparal on glass slides. Illustrations were all based on Euparal mounted preparations and photographed under magnification using the Olympus Camedia C-750 camera with an Olympus Soligor Adapter Tube and Slide Duplicator for Digital 10 Dptrs modified for object glasses.

Distribution maps: Maps were compiled from labels data of specimens examined. The type location is indicated by a star shaped marker while all others are represented by circles. In the case of *Ch. grisea* Aurivil. no type locality is indicated due to the original citation simply stating "Brit. East-Africa: Juba River".

Citation of specimen labels: Label data of type specimens are quoted verbatim; however, the month of capture of the adult is given in Roman numerals and the name of the collector is preceded by leg. throughout.

Measurements and terminology: Forewing length was measured to the nearest millimeter and represents the shortest distance between wing base and apex. The ranges given are those of the smallest and largest specimen in the series examined. The terminology for genitalia is based on Klots (1970).

Illustrations: Plates were produced by the author using CorelPhotoPaint 12. The photographed adult type specimens have not been altered, but in some illustrations of non-typical specimens, dissecting or other damage has been digitally reconstructed, taking special care with regard to maintaining original shape and proportions.

Results

Chionopsyche Aurivillius, 1909
Arkiv Zool. **5** (5): 10.
Type-species: *Chionopsyche montana* Aurivillius, 1909, Arkiv Zool. **5** (5): 11, fig. 44, by monotypy.

Classification: Aurivillius (1927 [1930]) placed *Chionopsyche* in the subfamily Chionopsychinae, and its inclusion in this subfamily has been perpetuated in all subsequent accounts. It is only its placement within the family that there has been some dispute (see below). The following features are characteristic of the taxon:

- Frontoclypeus without central protrusion;
- labial palpi without chaetosema-like organ;
- forewing, M1 free and CuA stalked with M3;
- hindwing, M2 arising from the cell about midway between M1 and M3 those are remote and parallel;

- additional humeral vein(s) absent in hindwing;
- tibial spurs are long, spur formula is 0-2-4;
- ♂ genitalia strongly asymmetric with left valvar complex reduced;
- uncus and gnathos present, uncus simple not bifurcate;
- transtilla absent and left valva present as a sclerotized fold fused with basal part of tegumen;
- right valva also reduced in size, rounded, with saccular process curved in complicated way;
- juxta reduced;
- aedeagus short, tubular, weakly sclerotized, with vesica lacking cornuti;
- in the ♀ genitalia apophyses anteriores shortened, much shorter than apophyses posteriores;
- base of apophyses posteriores enlarged forming sclerotized, non-setose cylinder supporting the narrow, setose papillae anales;
- lamellae vaginalis weakly observed; antrum distinct, flattened dorso-ventrally;
- ductus seminalis arising from caudal part of ductus bursae near antrum; signa absent.

The exact position of the genus and subfamily as a whole, in relationship to other genera and subfamilies of the Lasiocampidae or even the African Eupterotidae, remains poorly defined. Minet (1994) recognized it as the most primitive subfamily based on the presence of a lot of plesiomorphic characters. See also discussion below.

References: Previous references include Aurivillius (1927 [1930]), Collier (1936), Fletcher & Nye (1982), Minet (1994), Lemaire & Minet ([1998]); Zolotuhin & al. (2010).

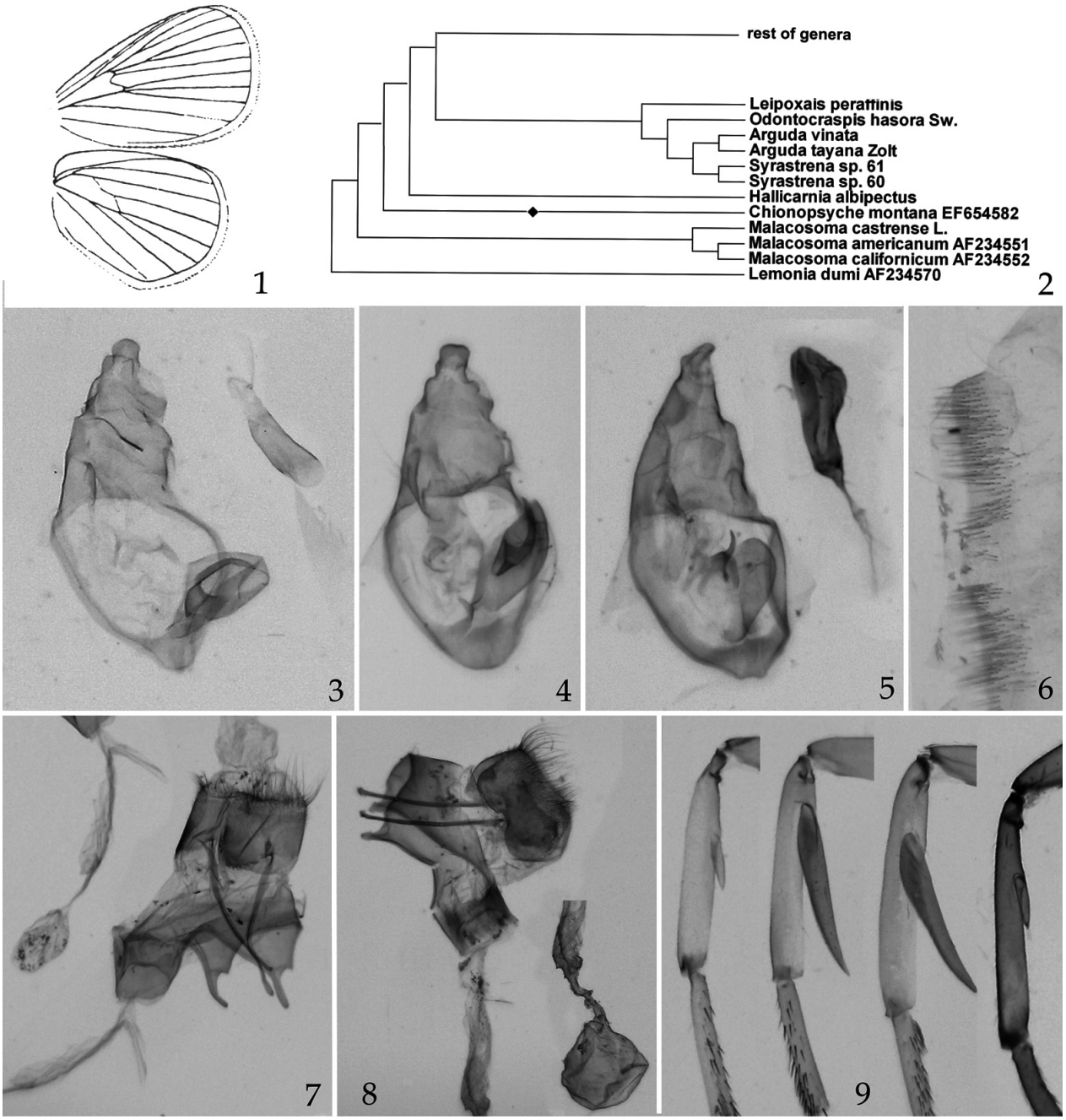
Adult (col. pl. 10: 1-9): Vestiture white or off-white to greyish, legs banded alternately white and orange, with black tarsal rings. Wings short and broad, with rounded, smooth outer margin. Ground colour of wings also white to off-white or greyish, with single dark (black or reddish brown) forewing linear fasciae, consisting of spots interrupted between the veins. A discal spot is present only in *Ch. **admirabile*** **spec. nov.** Hindwings patternless, except in *Ch. **admirabile*** **spec. nov.**, and of the same ground colour. Abdomen long and elegant, with apical tuft of hair-like scales. In *Ch. grisea* Aurivil. the grey ♂ differs from the creamy white ♀ but sexual dimorphism is otherwise limited to the ♀♀ being just slightly larger and more robust, their wing pattern more poorly defined.
Forewing length: ♂ 18-25 mm; ♀ 24-31 mm.
Head: Rough-scaled; eyes large, glabrous; labial palps distinct, conspicuous, without chaetosema-like organ, covered with orange and dark grey scales; frontoclypeus without any sclerotized central protrusion; antennae straw coloured with brown rami, bipectinate in both sexes, with shorter rami in females.
Venation (fig. 1) (after *Ch. montana* Aurivillius, 1909): Forewing, Sc free, R1 free arising from medial part of R-Cu cell, R2 and Rs as well as R4 and R5 stalked but their bases separated; M1 free, its base close to R4+R5; base of M2 close but not fused to M3, and bases of M3 and CuA1 almost fused. A1 in the form of a fold; only single A present. Discal vein present as a strongly concave vein. Hindwing, Sc anastomises with Rs forming a small, narrow humeral cell without additional humeral vein. Bases of Rs and M1 widely separated; M2 arising from the cell about midway between M1 and M3 which are remote and parallel; bases of M3 and CuA fused. The single anal vein is well developed and A1 appears as a fold. Discal vein strongly concave. Trace of M-branch is visible in R-Cu cell in both wings.
Fore tibia (fig. 9): Epiphysis present in both sexes; ellipsoid in shape, in ♂♂, 4/5, or as long as the tibia, much shorter, ¼ - 1/5 of tibia length, in ♀♀.

♂ genitalia (figs. 3-5) strongly asymmetric. Uncus and gnathos well developed. Uncus simple, undivided and flattened, more or less rectangular, broad. Gnathos also rectangular, with short lateral arms. Left valva reduced to a sclerotized fold fused with basal part of tegument; right valva short, rounded, somewhat flattened, with broad concave cucullus; sacculus narrow, sickle-shaped and complexly curved. Vinculum band-shaped, without distal processes and with short saccus. Juxta absent or hook-shaped. Aedeagus tubular, short and broad, sometimes with enlarged apical part, with broad dorso-apical opening of vesica; the latter bag-shaped and lacking any cornuti. Sternum VIII is not modified. Because of white coloration of the moths, all parts of the genitalia and the terminal sclerites are weakly sclerotized and quickly boiled in the alkaline solution used in the preparation.

♀ genitalia (figs. 7, 8): Papillae anales short and low, densely covered with short setae, situated on caudal margin of enlarged, sclerotized base of apophyses posteriores which have lost all setae and form sclerotized cylinders; both pairs of apophysis are present but apophyses anteriores much shorter, ¼ - 1/6 the length of apophyses posteriores; base of apophysis anterioris forked and broadened, more distinct in *Ch. montana* Aurivil. Lamellae vaginalis weakly observed; antrum distinct, flattened dorso-ventrally, dorsally membraneous; ductus seminalis arising from caudal part of ductus bursae near antrum; signia absent. Although 3 ♀♀ were prepared, the homology of their genitalic parts is still not clear. I suppose, appendix bursae is absent here. Ductus bursae is unsclerotized, finely membraneous, of elongated pear-shaped form, with distinct cranial narrowing. Corpus bursae relatively small, spherical. No signs of asymmetry are visible despite the strongly asymmetric ♂ genitalia.
Caudal membraneous part of tergum VIII enlarged and covered with fine, hair-like, undulating setae presumably used in covering egg clusters.

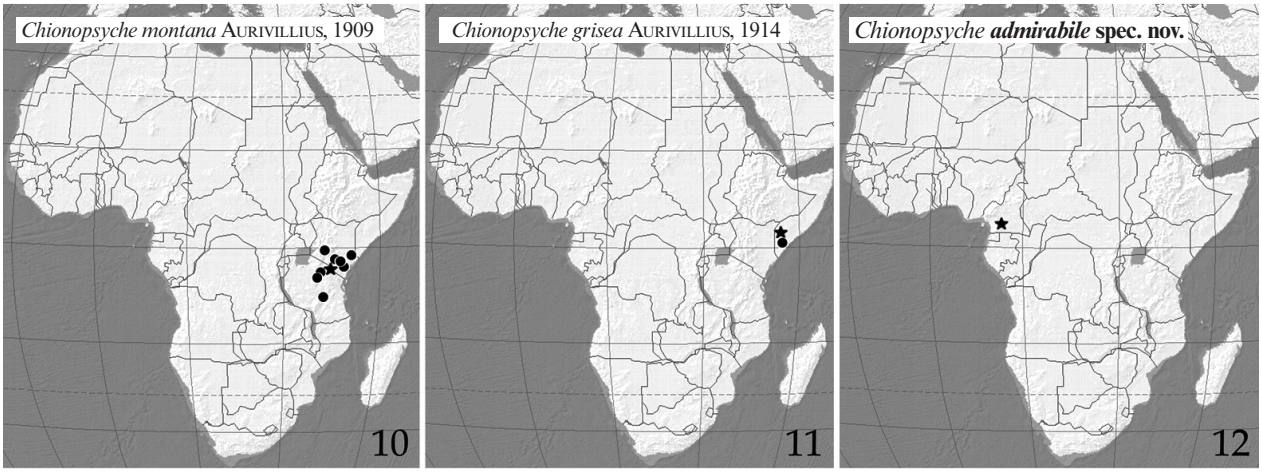
Diagnosis: Within its distributional range, *Chionopsyche* is readily differentiated from other members of the Lasiocampidae but bears close external similarity to *Phiala* Wallengren, 1860 - a large and diverse African genus of the Eupterotidae. The latter is mostly not pure white, having yellow or brown abdomens; the forewing's black medial fascia are closer to the external margin and lack the interruptions between the veins. The hindwings may, or may not be patterned and there may be more, or less, black scales irrorating the wings; shape of the wing is also different being more elongated in *Phiala*. Genitalically, the genera are absolutely distinct.

Distribution (figs. 10-12): The genus is predominantly central African and is recorded from eastern Cameroon, northern Tanzania, [southern] Kenya and southern Somalia. The absence of records from the neighboring territories and the disjunct distribution of the genus could be attributed to collecting lacunae and may be corrected in future. A similarly inexplicable, widely separated population is represented by one specimen collected in Nigeria, probably mislabeled.



1: Wing venation of *Chionopsyche montana* Aurivillius, 1909, from Aurivillius 1909;
2: phylogenetic relationship of the genus *Chionopsyche* (marked), orig.;
3: ♂ genitalia of *Chionopsyche montana* Aurivillius, 1909, aedeagus extracted, holotype (RMS);
4: ♂ genitalia of *Chionopsyche grisea* Aurivillius, 1914, without aedeagus, Somalia (ZSM);
5: ♂ genitalia of *Chionopsyche* ***admirabile*** **spec. nov.**, aedeagus extracted, holotype (MRCA);
6: abdominal tergites of *Chionopsyche grisea* Aurivillius, 1914 ♀ with spined setae;
7: ♀ genitalia of *Chionopsyche montana* Aurivillius, 1909, Kenya (ZSM), bursa separated;
8: ♀ genitalia of *Chionopsyche grisea* Aurivillius, 1914, Somalia (ZSM), bursa separated;
9: forelegs showing epiphysis; from left - ♀ and ♂ *Chionopsyche montana* Aurivillius, 1909; ♂ *Chionopsyche* ***admirabile*** **spec. nov.**; ♀ *Chionopsyche grisea* Aurivillius, 1914.

Bionomics. Phenology and habitat association: Data deficient. The type species is bivoltine (March-May and October-December) whereas the other two are likely to be monovoltine. It is thought, that the eggs are covered with modified scales from the ♀ abdomen (assuming they are laid in clusters and they are the aestivating stage similar to some other species with such strategy - *Eriogaster* Germar, 1810 or *Philotherma* Möschler, 1887). For *Ch. montana* Aurivil. and *Ch. grisea* Aurivil. this would probably be necessary to avoid temperature factors because the first is restricted to arid landscapes such as savannas or grassland, and the second - to river valleys, probably, inhabiting biotopes with higher humidity but prone to the regular intermittent drying. *Ch.* ***admirabile*** **spec. nov.**, is recorded as having been collected in disturbed forest but no further information is given.
Early stages and hostplants are still unknown.



Key to the species

1. Fore wings with transverse linear black pattern without discal dot 2
- Fore wings with reddish brown fasciae and distinct discal dot ..... *Ch.* ***admirabile*** **spec. nov.**
2. Smaller, forewing length 16-18 mm in ♂♂ and 30-32 mm in ♀♀, greyish to creamy coloured ..... *Ch. grisea* Aurivil.
- Larger, forewing length 21-23 mm in ♂♂ and 35-37 mm in ♀♀, white matt to snowy white..... *Ch. montana* Aurivil.

Specific accounts

Chionopsyche montana Aurivillius, 1909 (colour pl. 11: 1-4)

Arkiv Zool. **5**: 11, fig. 44. Type locality: [Tanzania] Deutsch Ostafrika: Kilimandjaro, Moschi. Holotype (by monotypy): ♂ (RMS) [examined].

Redescription: Head white with grey frontal vestiture and orange palps. Ground colour of wings pure, snow-white. Forewing upperside with single, medial, transverse linear fascia present as a row of inter-neural black spots. The shape of the fascia varies - from straight to concave or sinuous, but it appears to be simply individual variation within a population. Such variation observed even within a single population. Discal spot absent. Hind wings without pattern. Cilia concolorous with the ground colour. Underside of the wings similarly patterned, but with black pattern elements not nearly as distinct as on the upperside. Legs generally white, with yellow and orange coloured basal zone (coxa and basal part of femur) and with black tarsal rings. Sexual dimorphism limited to the ♀♀ being larger with more weakly defined black pattern.
Forewing length: ♂ 21-23 mm; ♀ 35-37 mm.

♂ genitalia (fig. 3): Uncus with rounded apex. Rudiment of the left valva distinct, setose; right valva short, rounded, flattened; sacculus narrow, sickle-shaped and curved dorso-ventrally. Juxta absent. Aedeagus tubular, short and broad, narrow apically.

♀ genitalia (fig. 7): Enlarged sclerotized base of apophyses posteriores large and high. Base of apophysis anterioris forked and broadened. Tergites without spined setae.

Diagnosis: Snow-white forewings with black medial fascia clearly differentiate this taxon from both other congeners which have either a ground colour that is distinctly creamy or greyish (*Ch. grisea*) or which have the medial pattern reddish brown (*Ch. admirabile*). In addition, the ♂♂ of the latter may be distinguished by the short right valva, with sacculus curved from up to down and juxta absent.

Distribution (fig. 10): Most specimens of this species were collected from a small area in southern Kenya (Kibwezi) and northern Tanzania, (Moschi [=Moshi] at the base of Mt. Kilimanjaro). The Nigerian population, represented by a single male (1 ♂, N. Nigeria, Kaduna, 27.V.1970, leg. Dr. Politzar in ZSM), is separated from the East African distribution of the species by a distance of some 3600 kilometers. It is proposed here that such disjunct distribution is the result of either accidental introduction (there is an airport in Kaduna where the ♂ was caught) or incorrect labelling, and needing further investigation, has not been included here in the general distribution of the species.

Bionomics: The species demonstrates bimodal distribution through the year and therefore can be considered to develop two generations with flight periods from March-May and October-December, with peaks in May and December correspondingly. Contrary to its congeners, the species seems to be associated with arid habitats such as savannas or grassland.

Material examined (25 ♂♂, 7 ♀♀): Holotype ♂, [Deutsch Ostafrika: Tanzania] Kilimandjaro, Moschi (RMS, GU RMprep 9972); 1 ♂, [Tanzania] Kilimandj[aro]., [Kibongoto] Kibonoto, kulturz., 1 mars, Sjöstedt (RMS); 1♂, 1♀, Tanzania, Iringa Reg., W Udzungaya Parc, h=560 m, 10.XII.2006 (MWM); 2 ♂♂, Kenya, Kibwezi, 1.-3.V.1992, leg. Dr. Politzar (ZSM); 1 ♂, Kenya, Kibwezi, 14.-30.XI.1992, leg. Dr. Politzar (ZSM); 1 ♀, Kenya, Kibwezi, 15.-20.XI.1992, leg. Dr. Politzar (ZSM); 1 ♂, Kenya, Katamayo, 22.-29.X.1992, leg. Dr. Politzar (ZSM); 10 ♂♂, Kenya, Kibwezi, 700 m, 10.-25.XII.2001, Lf, leg. Dr. Politzar (GU 13492, 13493, MWM); 1 ♂, Kenya, Kibwezi, 700 m, 15.-30.IV. 2001, Lf, leg. Dr. Politzar (MWM); 1 ♂, Kenya, Kibwezi, 700 m, 21.V.2002, Lf, leg. Dr. Politzar (MWM); 2 ♂♂, Kenya, Kibwezi, 700 m, 10.-15.XII.2001, Lf, leg. Dr. Politzar (MWM); 1 ♀, Kenya, South Ukambani, 6.V.2002, leg. Dr. Politzar (ZSM); 1 ♂, Masai (BMNH, GU Lasio 1156).
2 ♂♂, 4 ♀♀ are kept also in the National Museum of Kenya, Nairobi (NMK) [after colour photo examined] collected in NE Tanzania (Meru Mt.) and Kenya (Kibwezi, Sokoke and Garissa) (L. Kühne, pers. comm.).

Chionopsyche grisea Aurivillius, 1914 (colour pl. 11: 7 , 8)

Arkiv Zool. **9**: 1. Type locality: [?Somalia] Brit. East-Africa: [Jubba] Juba River. Holotype (by monotypy): ♂ (BMNH) [examined].

Redescription: Head creamy grey with darker frontal vestiture and orange palps. Ground colour of wings off-white to greyish. Forewing upperside with single, medial, transverse, very narrow, linear fascia present as a row of black dots between the veins. The shape of the fascia varies from concave to sinuous, but this appears to be simply individual variation within a population. Discal spot absent. Hind wings without pattern. Cilia concolorous with the ground colour. Legs generally cream grey, with yellow and orange colored basal zone and with black tarsal rings. Sexual dimorphism limited to the ♀♀ being larger and lighter, with fine semilunate pattern.

Forewing length: ♂ 16-18 mm; ♀ 30-32 mm.

♂ genitalia (fig. 4): Uncus with truncated apex. Rudiment of the left valva distinct, setose; right valva short, rounded, swollen; sacculus narrow, sickle-shaped and curved dorsally. Juxta absent. Aedeagus tubular, short and broad, narrow apically.

♀ genitalia (fig. 8): Enlarged sclerotized base of apophyses posteriores large but low. Base of apophysis anterioris slightly forked and broadened. Abdominal tergites with very characteristic spined setae forming caudal rows on every segment (fig. 6); they are absent from sternites and not found in related *Ch. montana* Aurivil. Their significance remains unclear.

Diagnosis: Smaller size, narrower, black medial pattern and greyish cream forewings differentiate this taxon from both other congeners which have either a pure white ground colour (*Ch. montana* Aurivil.) or which have the medial pattern reddish brown (***Ch. admirabile* spec. nov.**). In addition, the ♂♂ of the latter may be distinguished by the short right valva, with sacculus curved dorsally and juxta absent.

Distribution (fig. 11): *Ch. grisea* Aurivil. occurs in the southern parts of Somalia where it appears to be extremely localised. "Juba River", Jubba or Genalē, river that rises in the highlands of south central Ethiopia and flows 1660 km (1030 mi) to the Indian Ocean coast in Somalia. It is known as the Genalē in Ethiopia and as the Jubba in Somalia. As a matter of fact, Caanole River is its Somalian tributary. As only a very few specimens of the species are known and most of them originating from the same locality, distributional limits of the species are still unclear.

Bionomics: The species has only been recorded as being on the wing in April and May suggesting a single generation per season. Nothing is known of its habitat association other than all specimens were collected in river valleys, probably preferring to inhabit biotopes with higher humidity.

Material examined (15 ♂♂, 5 ♀♀): Holotype ♂, [?Somalia] B. E. Africa, [Jubba] Juba River, 1912, C. L. Chevallier (GU Tams 1938/287, BMNH); 3 ♂♂, 1 ♀, Somalia m., Caanole Fluß, 4.IV.1988, leg. Dr. Politzar (ZSM); 3 ♂♂, 1 ♀, Somalia m., Caanole Fluß, 17.IV.1988, leg. Dr. Politzar (ZSM); 6 ♂♂, Somalia m., Caanole Fluß, 3.V.1988, leg. Dr. Politzar (ZSM); 2 ♂♂, 3 ♀♀, Somalia m., Caanole Fluß, 30.IV.1989, leg. Dr. Politzar (ZSM).

***Chionopsyche admirabile* spec. nov.** (colour pl. 11: 5, 6)

Type material (3 ♂♂): Holotype ♂, Cameroun: Zamakoë, res. for. 26.VII.1992, Th. Bouyer (MRCA); Paratypes: ♂, Cameroun: Zamakoë, res. for. 26.VII.1992, Th. Bouyer (RMCA); ♂, Cameroun: Zamakoë, res. for. 4/5.VII 1992, Th. Bouyer (MRCA);

Description: Head white with grey frontal vestiture and orange palps. Ground colour of wings pure snow-white. Forewing upperside with single, medial, transverse, linear fascia present as row of reddish brown spots between veins. The shape of the fascia in all known specimens, is more or less constant, present as a straight to slightly convex line. Discal spot present, distinct, concolorous with median fascia. Hind wings similarly marked with median fascia but not reaching the costal and hind margins. Cilia concolorous with the ground colour. Underside of the wings similarly patterned, but less distinct than upperside. Legs generally white, with yellow and orange coloured basal zone (coxa and basal part of femur) and with black tarsal rings. Forewing length: ♂ 23-25 mm, wingspan 42-46 mm. The ♀ is unknown.

♂ genitalia. (Fig. 5) strongly asymmetric. Uncus and gnathos well developed. Uncus simple, undivided and somewhat elongate. Gnathos also rectangular, with short lateral arms. Left valva reduced up to a sclerotized fold fused with basal part of tegumen, without distinct setae and larger than in other congeners; right valva short, rounded, a bit swollen, without saccular process. Juxta is presented as a plate with short, sclerotized hook, curved dorsally. Aedeagus tubular, short and broad, with enlarged apical part, with broad dorso-apical opening of vesica; the latter bag-shaped and lacking any cornuti. Sternum VIII is not modified.

Diagnosis: Snow-white forewings with reddish brown medial fascia clearly differentiate this taxon from both other congeners which have either the ground colour distinctly creamy or greyish (*Ch. grisea* Aurivil.) or which have the medial pattern pure black (*Ch. montana* Aurivil.).

Distribution (fig. 12): Restricted to the eastern Cameroon and is known only from the type locality.

Bionomics: The species is on the wing in July and was collected in disturbed forest. Probably monovoltine but more material is needed before a definitive answer to this question can be given.

Etymology: From Latin 'admirabilis' meaning amazing or a worthy surprise.

Discussion: The discovery of a new species within this small, and what was previously thought to be, well-known group, has led to many questions regarding our knowledge of the family as a whole. This work clearly shows that African Lasiocampidae are still very poorly investigated. The many gaps and lack of clarity that exists in their micro- and macrosystematics requires the use of non-traditional methods if the family is to be properly investigated. The *Chionopsyche* are no exception.

The subfamily Chionopsychinae with the single genus *Chionopsyche* is somewhat anomalous because the hindwing venation is of a trifid ground plan not quadrifid and the ♂ genitalia are strongly asymmetric. It is probably why Forbes (1955) did not consider the genus within the Lasiocampidae but it was again included in the family by Fletcher & Nye (1982: 36). Recently, Minet (in Lemaire & Minet, 1998) considered it as a monotypic subfamily Chionopsychinae. Although it is probably the most primitive among the Lasiocampids, some characters comply with the Lasiocampid ground plan and placement of the genus (as well as the subfamily) can only be

decided more precisely after more of the related genera have been investigated. With the information available to date, it is possible to understand and accept its placement in the Lasiocampidae as too, its basal connection with *Malacosoma* Hbn. But surely it shall to be not recognizing as the most primitive subfamily of the Lasiocampidae as it did Minet (1994), and such autapomorphies as asymmetry of the ♂ genitalia, reduction of the juxta and presence of the sclerotized, non-setose cylinder supporting the papillae anales in the ♀ genitalia support this suggestion. Hence, it remains a basal branch bearing very specialized characters as well as numerous plesiomorphies also. The life cycle of the genus is therefore of great interest and it seems that the biology of *Chionopsyche* and morphology of its larvae will help to understand its relationships and evolution.

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Address of the author

Dr. Vadim Zolotuhin
Department of Zoology
State pedagogical University of Ulyanovsk
Pl. 100-letiya Lenina 4
RUS-432700 Ulyanovsk RUSSIA
e-mail: v.zolot@mail.ru